IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No:	10/523,556
Appellants:	Yosuke MITANI, et al.
Filed:	February 1, 2005
Title:	POWER SUPPLY DEVICE FOR VEHICLE (AS AMENDED)
TC/A.U.:	2836
Examiner:	Hal Ira Kaplan
Confirmation No.:	1189
Docket No.:	MAT-8650US

APPEAL BRIEF

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Further to the Notice Of Appeal filed **September 3, 2008**, Appellants are submitting this Appeal Brief for the above-identified application.

I. REAL PARTY IN INTEREST

The real party in interest is Matsushita Electric Industrial Co., Ltd.

II. RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-9 are pending in the above-referenced application. Claims 1 and 9 stand rejected under 35 U.S.C. § 103(a) as obvious over the combination of Furui (U.S. Patent No. 6,652,001) and Kimura (U.S. Patent No. 5,373,226). Claims 2-7 stand rejected under 35 U.S.C. § 103(a) as obvious over Furui, Kimura and Masegi et al. (U.S. Patent No. 5,045,835). Claim 8 stands objected to as being dependent upon

a rejected base claim. Appellants currently appeal with respect to these rejections of claims 1-7 and 9.

IV. STATUS OF AMENDMENTS

All previously filed Amendments have been entered.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention relates to a power supply device for a vehicle. An exemplary embodiment of a vehicle including the power supply device for the vehicle is shown in FIG. 1. The exemplary power supply device is shown in more detail in FIG. 2.

With respect to independent claim 1, as shown in FIG. 1, the vehicle includes a brake 5 and a brake pedal 4 (substitute specification page 3, line 26 through page 4, line 1). The exemplary power supply device includes an electronic controller 3, which is shown in both FIGs. 1 and 2 (page 3, line 24). The electronic controller 3 receives at least one of: (a) information supplied from the brake pedal 4 (page 3, line 26 through page 4, line 1) and (b) information in response to a driving status of the vehicle (page 10, lines 8-11). Based on the information received by the electronic controller 3, the electronic controller 3 outputs information to the brake 5 about braking the vehicle (lines 5-8).

As shown in both FIGs. 1 and 2, the exemplary power supply device also includes a battery 1 for powering the brake via the electronic controller 3 and an auxiliary power supply 2 for powering the brake 5 via the electronic controller 3 when the battery 1 encounters an abnormality (page 3, lines 22-23 and 25-26). As shown in FIG. 2, the auxiliary power supply 2 includes a capacitor unit 15 (page 4, lines 22-23), a power supply section 19 (page 5, lines 3-4) and a compulsory operating section 21 (line 7). The capacitor unit 15 is formed of a plurality of capacitors (page 4, lines 22-23). The power supply section 19 is for allowing the capacitor unit 15 to power the electronic controller 3 when the battery 1 operates not only abnormally but also normally (page 6, line 26 through page 27, line 2 and page 7, lines 21-26). The compulsory operating section 21 is for operating the power supply section 19 (page 5,

lines 7-8). The power supply section 19 is operated for a given time and an operating status of the power supply section 19 is monitored during a normal operation of the battery 1 (page 5, lines 7-10).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1) Claims 1 and 9 under 35 U.S.C. § 103(a) as obvious over the combination of Furui (U.S. Patent No. 6,652,001) and Kimura (U.S. Patent No. 5,373,226).

2) Claims 2-7 under 35 U.S.C. § 103(a) as obvious over the combination of Furui, Kimura and Masegi et al. (U.S. Patent No. 5,045,835).

VII. ARGUMENT

In an Office Action dated July 2, 2008, claims 1 and 9 were rejected under 35 U.S.C. § 103(a) as obvious over the combination of Furui (U.S. Patent No. 6,652,001) and Kimura (U.S. Patent No. 5,373,226), and claims 2-7 were rejected under 35 U.S.C. § 103(a) as obvious over the combination of Furui, Kimura and Masegi et al. (U.S. Patent No. 5,045,835). It is respectfully submitted, however, that the claims are allowable over the art of record for the reasons set forth below.

Appellants' invention, as recited by claim 1, includes a feature which is neither disclosed nor suggested by the art of record, namely:

> ... a compulsory operating section for operating the power supply section, wherein the power supply section is operated for a given time and an operating status of the power supply section is monitored during a normal operation of the battery. (Emphasis added).

Furui discloses a device which tests the integrity of a backup capacitor 32 which is used to power air bags in a vehicle when the main battery 1 fails. The device includes a microcomputer 34 which is configured to store predetermined data in a memory 35 a predetermined time T after the main battery 1 fails (Furui col. 6, lines 3-5). When a terminal voltage Vc of the backup capacitor 32 is above a certain level, the microcomputer 34 is able to operate from the power provided by the backup capacitor 32 (col. 5, lines 36-40).

If the backup capacitor is working, the terminal voltage Vc is above the certain level for a long period of time TM1 (col. 5, lines 40-44 and col. 5, line 65 through col. 6, line 2). If the backup capacitor is not working, the terminal voltage Vc is above the certain level for a shorter period of time TM2 (col. 5, lines 57-59 and col. 5, line 65 through col. 6, line 2). T is set to a time that is between TM1 and TM2 (col. 5, line 65 through col. 6, line 2).

If the backup capacitor is working, the microcomputer 34 is operable after time T passes and, therefore, the microcomputer 34 is able to store the predetermined data in the memory 35 (col. 6, lines 9-13). If the backup capacitor is not working, the microcomputer 34 is not operable after time T passes and, therefore, the microcomputer 34 is not able to store the predetermined data in the memory 35 (col. 6, lines 5-9). When the device is turned back on, the memory is checked for the predetermined data (lines 13-15). If the predetermined data is stored in the memory, it is determined that the backup capacitor was operable, and if the predetermined data is not stored in the memory, it is determined that the backup capacitor was not operable (lines 16-21).

Thus, Furui's device, is incapable of monitoring a power supply section during a normal operation of the battery, as required by Applicants' claim 1. In particular, as described above, the data is only stored in memory after the battery fails. Thus, the integrity of the backup capacitor 32 is only tested after the battery fails and not during a normal operation of the battery. Further, Furui's disclosure is limited to storing data in memory and, when the microcomputer turns back on, checking whether the data was stored in memory. Merely checking whether data is stored in memory is not monitoring the power supply section during normal operation of the battery. Accordingly, Furui does not disclose "an operating status of the power supply section is monitored during a normal operation of the battery," as required.

In the Office Action dated July 2, 2008, the Examiner argued that Furui discloses this feature at col. 5, line 20 through col. 6, line 14 and FIG. 1 ("wherein an operating status (Vc) of the power supply section is monitored during a normal operation of the battery (1) for a time"). The Examiner argued as follows:

> The Applicants state that merely checking whether data is stored in memory is not monitoring the power supply section during normal operation. The Examiner agrees; however, the monitoring of the power supply section of Furui occurs before the decision whether to store data in memory is made. The terminal voltage is monitored, and when it is less than a predetermined voltage, the microcomputer is in an inoperable state. If, on the other hand, the terminal voltage is greater than or equal to the predetermined voltage, the microcomputer runs normally, and data is stored in memory.

See Office Action dated July 2, 2008 at paragraph 10 (emphasis added).

The Examiner's argument is without support. In particular, Furui does not disclose in col. 5, line 20 through col. 6, line 14, or anywhere else for that matter, that the power supply is monitored before the decision whether to store data in memory is made.

Kimura relates to a constant voltage circuit formed of MOSFETs. The circuit includes a reference voltage generator 1 and an error amplifier 2. Voltage generator 1 is a circuit used to obtain a reference voltage V_{REF} which is supplied to the error amplifier 2. See, e.g., col. 9, lines 45-50. Kimura is also silent with respect to "an operating status of the power supply section [being] monitored during a normal operation of the battery," as required by claim 1.

It is because Applicants include the feature of "a compulsory operating section for operating the power supply section, wherein the power supply section is operated for a given time and an operating status of the power supply section is monitored during a normal operation of the battery," that the following advantages are achieved. Namely, a backup power supply for a system may be operated while the main power supply is operating normally to monitor whether the backup power supply is functional. Thus, it may be determined whether the backup power supply will fail before the backup power supply is needed to power the system. In contrast, according to the cited prior art, it is only after the backup power supply fails that the integrity of the backup power supply is tested.

Accordingly, for the reasons set forth above, claim 1 is patentable over the art of record.

With respect to the rejection of claims 2-7, Masegi et al. also does not disclose or suggest monitoring the operating status of the power supply during normal operation of the battery. Accordingly, Masegi fails to make up for the deficiencies set forth above with respect to Furui and Kimura. Claims 2-7 and 9 include all the features of allowable claim 1 from which they depend. Thus, claims 2-7 and 9 are also allowable over the art of record for at least the reasons set forth above.

In view of the amendments and arguments set forth above, the above-identified application is in condition for allowance which action is respectfully requested.

Respectfully Submitted,

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Enclosures: Claims Appendix
Evidence Appendix
Related Proceedings Appendix

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CLAIMS APPENDIX

1. (Previously Presented) A power supply device for a vehicle comprising:

an electronic controller for receiving at least one of information supplied from a brake pedal and information in response to a driving status of the vehicle, and for outputting information to a brake about braking the vehicle based on the information received by the electronic controller;

a battery for powering the brake via the electronic controller; and

an auxiliary power supply for powering the brake via the electronic controller when the battery encounters an abnormality,

wherein the auxiliary power supply includes a capacitor unit formed of a plurality of capacitors, a power supply section for allowing the capacitor unit to power the electronic controller when the battery operates not only abnormally but also normally, and a compulsory operating section for operating the power supply section, wherein the power supply section is operated for a given time and an operating status of the power supply section is monitored during a normal operation of the battery.

2. (Original) The power supply device for a vehicle as defined in claim 1, wherein monitoring the operating status of the power supply section is halted when one of the battery and the auxiliary power supply operates abnormally.

3. (Original) The power supply device for a vehicle as defined in claim 1 further comprising an output detector for detecting at least one of an output voltage and an output current from the capacitor unit, wherein the output detector is used for monitoring the operating status of the power supply section.

4. (Original) The power supply device for a vehicle as defined in claim 3, wherein the output detector detects at least one of the output voltage and the output current from the capacitor unit in a given time after the power supply section starts operating.

5. (Original) The power supply device for a vehicle as defined in claim 3, wherein whether or not the power supply section is defective is determined by at least one of a comparison of an output voltage detected by the output detector after the power supply section operates for a given time with a given reference voltage and a comparison of an output current detected by the output detector after the power supply section operates for a given time with a given reference current.

6. (Previously Presented) The power supply device for a vehicle as defined in claim 5, wherein a determination about whether or not the power supply section is defective is carried out periodically.

7. (Original) The power supply device for a vehicle as defined in claim 5, wherein when the determination finds that the power supply section operates abnormally, information about the abnormality is supplied to the electronic controller.

8. (Original) The power supply device for a vehicle as defined in claim 5, wherein when the battery outputs a normal voltage but the voltage is not higher than a voltage of the capacitor unit, the determination about whether or not the power supply section is defective is not carried out.

9. (Previously Presented) The power supply device for a vehicle as defined in claim 1, wherein the power supply section is formed of a field effect transistor.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.